

I claim:

1. A linear measuring system for the recording of angular and position absolute values, where the scale includes a measurement track for generating absolute values which is recorded by an appropriate scanning head, wherein the scale with the measurement track is a structured material characteristic or a structured surface on a material, wherein the scale is composed of at least two segments which are identically created for the generation of absolute values and wherein at least one suitable track is provided on the scale for determining the absolute value of the particular segment reached by means of a further sensor arrangement and wherein means of switching are provided which use the absolute value of the segments and the calculated absolute value within the segment to provide the total absolute value for further processing.
2. The measuring system according to claim 1, wherein the at least one suitable track is at least one part of the measurement track composed of one or more tracks.
3. The measuring system according to claim 1, wherein the at least one suitable track is at least one parallel track applied onto the scale.

4. The measuring system according to claim 1, wherein the particular segments are designed with the same code sections.

5. The measuring system according to claim 3, wherein the parallel track is designed for magnetic signal recording.

6. The measuring system according to claim 5, wherein the parallel track contains permanent magnetic segments.

7. The measuring system according to claim 1, wherein an auxiliary power battery outside and/or inside the further sensor arrangement is provided for emergency supply.

8. The measuring system according to claim 1, wherein the absolute measuring system comprises at least two identical and staggered sensors (S1, S2) whose measured values are used for redundant signal evaluation by the external control system.

9. The measuring system according to claim 1, wherein the fundamental absolute measuring system is based on optical, sound, ultrasound, magnetic, inductive, electromagnetic or capacitive measuring systems or a combination thereof.

10. The measuring system according to claim 1, wherein the absolute value of the segment reached (1a to 1c) is determined

by logical evaluation of the traversed segments (1a to 1c) from a defined starting position.

11. The measuring system according to claim 1, wherein the structured material characteristic is a patterned material characteristic.

12. The measuring system according to claim 1, wherein the structured surface is a patterned surface.

13. The measuring system according to claim 1, wherein the scale with the measurement track is one of a structure and a pattern of a measuring object, the one of the structure and the pattern being provided substantially only in an operating range of sensors.

14. The measuring system according to claim 1, wherein the scale with the measurement track is a machined surface structure of a material.

15. The measuring system according to claim 1, wherein the scale with the measurement track is a lacquer layer structured with ultrasound.

16. The measuring system according to claim 1, wherein the scale is provided underneath a surface of a measuring object such that the scale can be detected by a sensor.